

State Injury Profile for Michigan

About the State Injury Profiles...

Following this introduction you will find the injury profile for your state and the nation. The maps and tables contain information on injury deaths and death rates; however, it is important to remember that hundreds of thousands of Americans are nonfatally injured each year, many of whom suffer permanent disabilities. Your state injury profile includes:

- The 10 leading causes of death by age group for your state and the nation. These charts contain the total number of deaths for the three-year period 1995 through 1997. The summary table at the bottom of each page shows the total number of injuries across all ages for the same three-year period and the average number of deaths per year.
- The tables on the next page show the number of deaths for your state and the nation for the leading causes of injury death (separated by the type of injury—unintentional, suicide, and homicide) for the same three-year period.
- The next pages contain U.S. maps indicating the death rate per 100,000 persons for all states over a three-year period (1995-1997) for the leading causes of injury death. Beneath each map is a graph showing the death rate over a 10-year period (1988-1997). These maps and graphs will allow you to compare death rates for your state to other states and understand the 10-year trend in your state compared to the U.S. trend.
- The last two maps in the Profile give death-rate data and 10-year trends for two of the most frequent and disabling types of injury-related deaths: traumatic brain injury-related deaths, which can be caused by falls, firearms, motor-vehicle crashes, or other causes; and firearm-related deaths, unintentional or the result of homicide or suicide.

This State Injury Profile 2000 is presented as an appendix to the Centers for Disease Control and Prevention (CDC) Injury Fact Book, *Working to Prevent and Control Injury in the United States*. The Fact Book contains information regarding the cost of injury and the value of prevention, the work of CDC's National Center for Injury Prevention and Control, and the Safe USA Partnership Council. The Fact Book also contains fact sheets for many of the leading causes of injury death. Additional information can also be obtained from—

- The CDC National Center for Injury Prevention and Control web site: <http://www.cdc.gov/ncipc/>
- The CDC National Center for Injury Prevention and Control, Office of Planning, Evaluation, and Legislation: 770-488-4936
- Safe USA web site: <http://www.cdc.gov/safe/>
- Safe USA toll-free number: 1-888-252-7751

United States

10 Leading Causes of Deaths by Age Group: 1995-1997

Rank	Age Groups										Total
	<1	1-4	5-9	10-14	15-24	25-34	35-44	45-54	55-64	65+	
1	Congenital Anomalies 19,113	Unintentional Injuries 6,432	Unintentional Injuries 4,734	Unintentional Injuries 5,614	Unintentional Injuries 41,018	Unintentional Injuries 38,858	Malignant Neoplasms 51,258	Malignant Neoplasms 134,242	Malignant Neoplasms 261,040	Heart Disease 1,834,538	Heart Disease 2,197,898
2	Short Gestation 11,760	Congenital Anomalies 1,922	Malignant Neoplasms 1,593	Malignant Neoplasms 1,491	Homicide 19,978	HIV 23,935	Unintentional Injuries 43,023	Heart Disease 104,809	Heart Disease 201,533	Malignant Neoplasms 1,147,043	Malignant Neoplasms 1,617,565
3	SIDS 9,438	Malignant Neoplasms 1,350	Congenital Anomalies 706	Homicide 1,023	Suicide 13,328	Suicide 17,825	Heart Disease 40,047	Unintentional Injuries 29,523	Bronchitis Emphysema Asthma 30,143	Cerebro-vascular 419,616	Cerebro-vascular 477,724
4	Respiratory Distress Synd. 4,117	Homicide 1,247	Homicide 510	Suicide 931	Malignant Neoplasms 4,919	Homicide 16,665	HIV 39,570	HIV 17,951	Cerebro-vascular 29,087	Bronchitis Emphysema Asthma 274,359	Bronchitis Emphysema Asthma 317,955
5	Maternal Complications 3,802	Heart Disease 680	Heart Disease 387	Congenital Anomalies 647	Heart Disease 3,106	Malignant Neoplasms 14,327	Suicide 19,938	Cerebro-vascular 16,960	Diabetes 24,987	Pneumonia & Influenza 226,837	Unintentional Injuries 283,912
6	Placenta Cord Membranes 2,871	Pneumonia & Influenza 504	HIV 288	Heart Disease 554	HIV 1,318	Heart Disease 10,097	Homicide 11,689	Liver Disease 16,300	Unintentional Injuries 20,719	Diabetes 138,117	Pneumonia & Influenza 253,099
7	Unintentional Injuries 2,356	HIV 411	Pneumonia & Influenza 221	Bronchitis Emphysema Asthma 294	Congenital Anomalies 1,254	Cerebro-vascular 2,118	Liver Disease 10,853	Suicide 14,317	Liver Disease 15,921	Unintentional Injuries 91,315	Diabetes 183,657
8	Perinatal Infections 2,321	Septicemia 236	Bronchitis Emphysema Asthma 143	Pneumonia & Influenza 184	Bronchitis Emphysema Asthma 684	Diabetes 1,881	Cerebro-vascular 8,281	Diabetes 12,589	Pneumonia & Influenza 10,830	Alzheimer's Disease 63,461	Suicide 92,722
9	Pneumonia & Influenza 1,409	Perinatal Period 222	Benign Neoplasms 132	HIV 180	Pneumonia & Influenza 630	Pneumonia & Influenza 1,724	Diabetes 5,581	Bronchitis Emphysema Asthma 8,395	Suicide 8,675	Nephritis 62,838	HIV 90,761
10	Intrauterine Hypoxia 1,355	Benign Neoplasms 189	Anemias 98	Cerebro-vascular 135	Cerebro-vascular 527	Liver Disease 1,690	Pneumonia & Influenza 4,335	Pneumonia & Influenza 6,405	Septicemia 5,350	Septicemia 52,315	Liver Disease 75,444

United States Total Number of Injury Deaths

Cause	Deaths	Percent
Unintentional Injury	283,912	64.5%
Intentional	156,434	35.5%
Total (1995-1997)	440,346	100.0%

Average Number of Injury Deaths per Year
In the United States = **146,782**

Michigan

10 Leading Causes of Deaths by Age Group: 1995-1997

Rank	Age Groups										Total
	<1	1-4	5-9	10-14	15-24	25-34	35-44	45-54	55-64	65+	
1	Short Gestation 640	Unintentional Injuries 237	Unintentional Injuries 198	Unintentional Injuries 183	Unintentional Injuries 1,389	Unintentional Injuries 1,201	Malignant Neoplasms 1,847	Malignant Neoplasms 4,960	Malignant Neoplasms 9,633	Heart Disease 69,159	Heart Disease 83,423
2	Congenital Anomalies 608	Congenital Anomalies 81	Malignant Neoplasms 58	Malignant Neoplasms 45	Homicide 801	Homicide 692	Heart Disease 1,702	Heart Disease 4,208	Heart Disease 7,754	Malignant Neoplasms 41,349	Malignant Neoplasms 58,625
3	SIDS 434	Malignant Neoplasms 48	Congenital Anomalies 27	Homicide 44	Suicide 471	Suicide 568	Unintentional Injuries 1,263	Unintentional Injuries 932	Bronchitis Emphysema Asthma 1,019	Cerebro-vascular 15,241	Cerebro-vascular 17,377
4	Respiratory Distress Synd. 248	Homicide 47	Homicide 24	Congenital Anomalies 28	Malignant Neoplasms 194	Malignant Neoplasms 479	HIV 689	Liver Disease 675	Cerebro-vascular 1,008	Bronchitis Emphysema Asthma 9,351	Bronchitis Emphysema Asthma 10,900
5	Maternal Complications 119	Pneumonia & Influenza 20	Heart Disease 19	Suicide 23	Heart Disease 95	HIV 475	Suicide 677	Cerebro-vascular 643	Diabetes 917	Pneumonia & Influenza 7,738	Unintentional Injuries 9,419
6	Placenta Cord Membranes 114	Heart Disease 16	Pneumonia & Influenza 9	Heart Disease 19	Congenital Anomalies 56	Heart Disease 386	Liver Disease 490	Suicide 461	Unintentional Injuries 665	Diabetes 5,320	Pneumonia & Influenza 8,817
7	Unintentional Injuries 111	Cerebro-vascular 11	Bronchitis Emphysema Asthma 7	Bronchitis Emphysema Asthma 14	Pneumonia & Influenza 33	Diabetes 73	Homicide 446	Diabetes 460	Liver Disease 559	Unintentional Injuries 3,238	Diabetes 7,022
8	Perinatal Infections 84	Perinatal Period 11	HIV 6	Pneumonia & Influenza 12	Bronchitis Emphysema Asthma 31	Cerebro-vascular 72	Cerebro-vascular 340	HIV 325	Pneumonia & Influenza 418	Nephritis 2,638	Suicide 3,104
9	Intrauterine Hypoxia 50	Bronchitis 7	Cerebro-vascular 5	Cerebro-vascular 4	HIV 26	Liver Disease 67	Diabetes 240	Bronchitis Emphysema Asthma 324	Suicide 287	Atherosclerosis 2,122	Nephritis 3,072
10	Pneumonia & Influenza 44	HIV 6	3 Tied	HIV 4	Cerebro-vascular 14	Pneumonia & Influenza 59	Pneumonia & Influenza 198	Pneumonia & Influenza 283	Nephritis 213	Alzheimer's Disease 1,817	Liver Disease 2,932

Michigan Total Number of Injury Deaths

<u>Cause</u>	<u>Deaths</u>	<u>Percent</u>
Unintentional Injury	9,419	62.5%
Intentional Injury	5,645	37.5%
Total (1995-1997)	15,064	100.0%

Average Number of Injury Deaths per Year
In Michigan = **5,021**

1995-1997 Leading Causes of Death

Unintentional Injury

United States Unintentional Injury

<u>Cause</u>	<u>Deaths</u>	<u>Percent</u>
MV Traffic	127,193	44.8%
Fall	33,633	11.8%
Poisoning	28,745	10.1%
Suffocation	12,987	4.6%
Drowning	12,360	4.4%
Fire/Burn	11,304	4.0%
Other Causes	<u>57,690</u>	<u>20.3%</u>
	283,912	100.0%

Michigan Only Unintentional Injury

<u>Cause</u>	<u>Deaths</u>	<u>Percent</u>
MV Traffic	4,611	49.0%
Fall	1,084	11.5%
Poisoning	522	5.5%
Suffocation	435	4.6%
Fire/Burn	432	4.6%
Other Causes	<u>2,335</u>	<u>24.8%</u>
	9,419	100.0%

Intentional Injury

United States Suicide

<u>Cause</u>	<u>Deaths</u>	<u>Percent</u>
Firearm	54,235	58.5%
Suffocation	15,960	17.2%
Poisoning	15,355	16.6%
Other Causes	<u>7,172</u>	<u>7.7%</u>
	92,722	100.0%

Michigan Only Suicide

<u>Cause</u>	<u>Deaths</u>	<u>Percent</u>
Firearm	1,767	56.9%
Suffocation	585	18.8%
Poisoning	560	18.0%
Other Causes	<u>192</u>	<u>6.2%</u>
	3,104	99.9%

United States Homicide and Legal Intervention

<u>Cause</u>	<u>Deaths</u>	<u>Percent</u>
Firearm	43,684	68.6%
Cut/Pierce	7,647	12.0%
Suffocation	2,327	3.7%
Other Causes	<u>10,054</u>	<u>15.8%</u>
	63,712	100.0%

Michigan Only Homicide and Legal Intervention

<u>Cause</u>	<u>Deaths</u>	<u>Percent</u>
Firearm	1,796	70.7%
Cut/Pierce	260	10.2%
Suffocation	91	3.6%
Other Causes	<u>394</u>	<u>15.5%</u>
	2,541	100.0%

Deaths per 100,000 Popul

- Highest
- 2nd High
- 3rd High
- Lowest

State	Death Rate
NH	11.19
VT	13.90
MA	7.71
RI	8.46
CT	10.49
NJ	10.33
DE	16.88
MD	13.08
DC	10.73

Year	United States	Michigan
1988	19.2	18.8
1989	18.8	18.5
1990	18.2	17.8
1991	16.8	15.8
1992	15.5	14.5
1993	15.8	14.8
1994	15.8	15.2
1995	16.2	16.5
1996	15.8	15.8
1997	15.8	15.2

Deaths per 100,000 Population

- Highest Rates
- 2nd Highest Rates
- 3rd Highest Rates
- Lowest Rates

State	Rate
NH	3.99
VT	4.00
MA	2.64
RI	4.39
CT	4.07
NJ	3.04
DE	3.25
MD	4.06
DC	4.82

Line graph showing the rate of motor vehicle deaths per 100,000 for the United States and Michigan from 1988 to 1997.

The Y-axis represents the Rate per 100,000, ranging from 0 to 9. The X-axis represents the Year, ranging from 1988 to 1997.

Legend:

- United States (Blue line)
- Michigan (Red line)

Year	United States (Rate per 100,000)	Michigan (Rate per 100,000)
1988	4.2	3.4
1989	4.1	3.7
1990	4.2	3.8
1991	4.2	3.9
1992	4.0	3.8
1993	4.0	2.8
1994	4.1	3.7
1995	4.2	3.9
1996	4.4	4.0
1997	4.5	4.0

Deaths per 100,000 Population

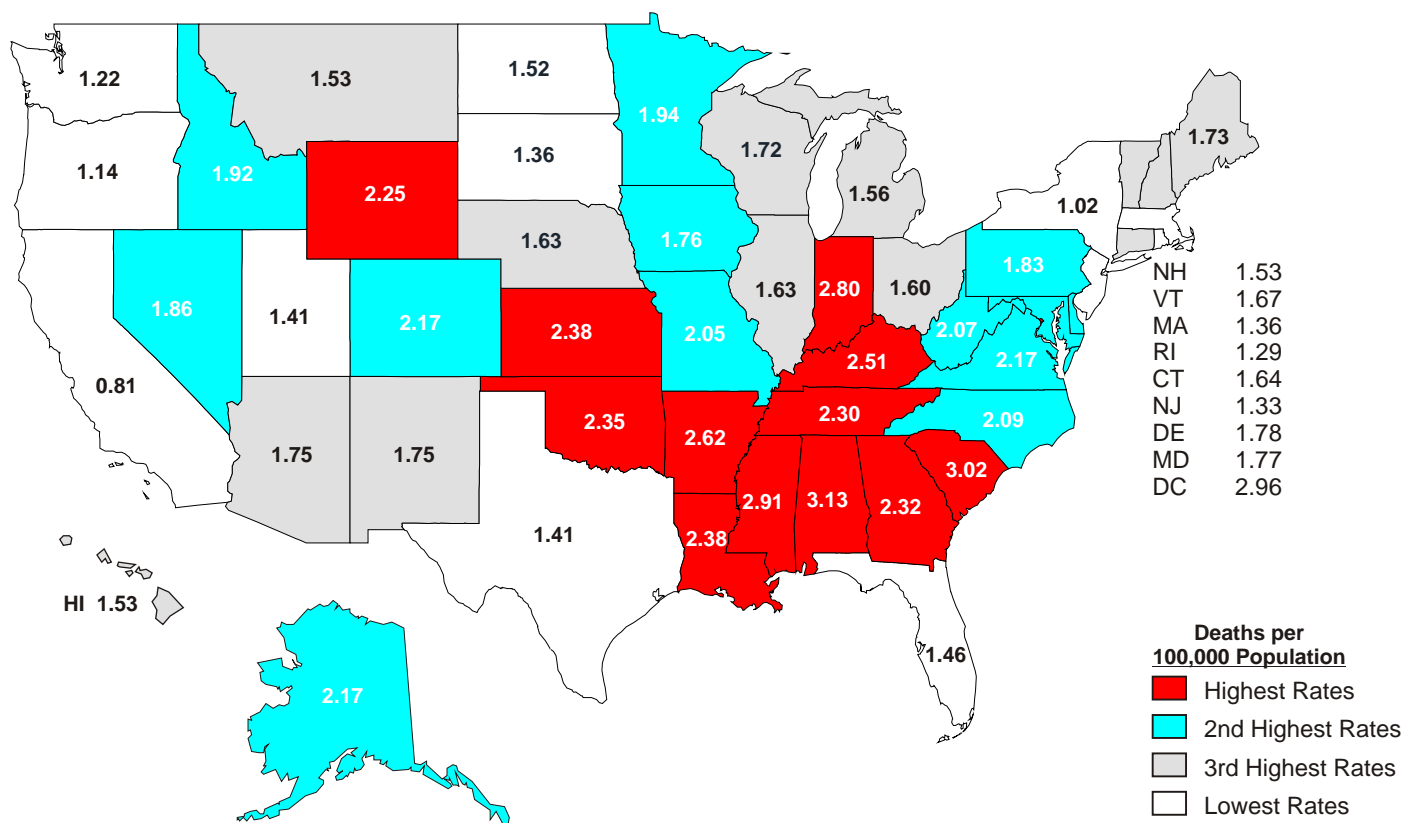
- Highest
- 2nd Highest
- 3rd Highest
- Lowest

State	Deaths per 100,000 Population
NH	1.59
VT	1.60
MA	0.55
RI	0.86
CT	5.69
NJ	5.87
DE	5.07
MD	0.81
DC	2.77

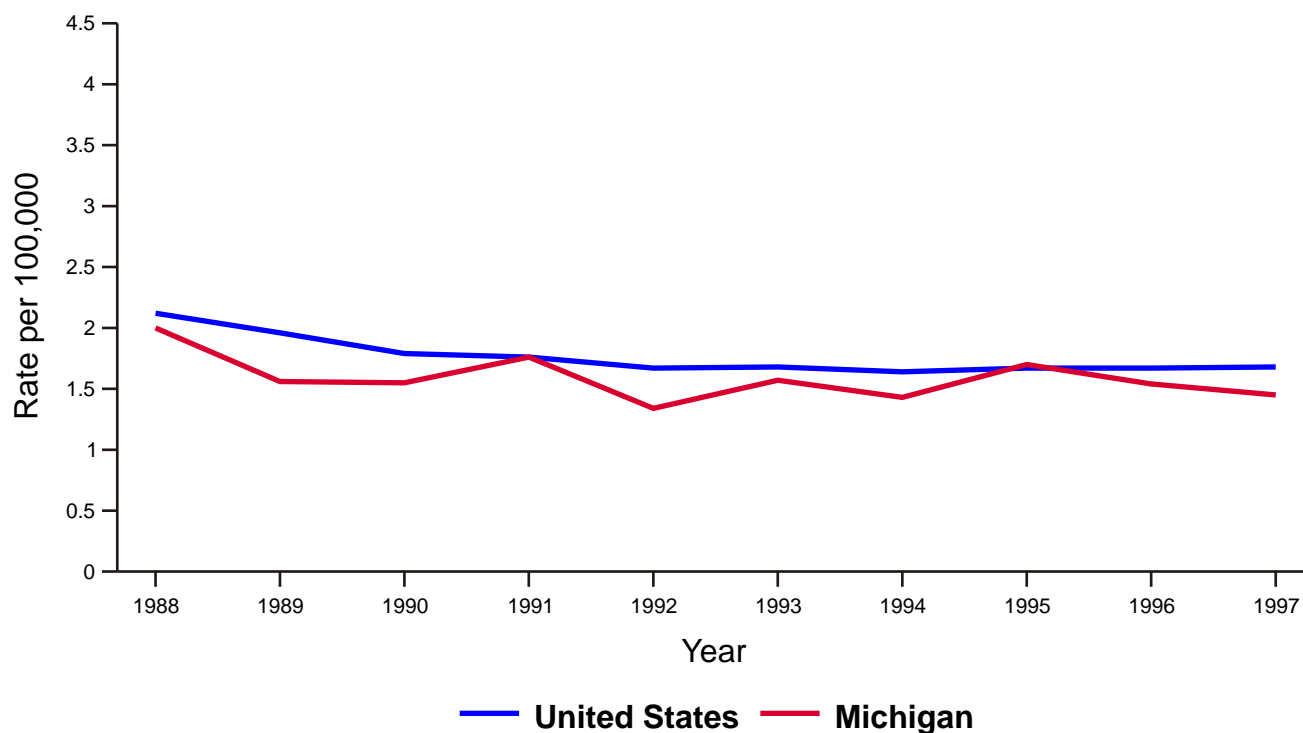
The graph displays the rate of motor vehicle deaths per 100,000 for the United States and Michigan from 1988 to 1997. The Y-axis represents the rate per 100,000, ranging from 0 to 9. The X-axis represents the year. The United States rate (blue line) starts at approximately 2.5 in 1988, dips to 2.3 in 1990, and rises to 3.8 in 1997. The Michigan rate (red line) starts at approximately 1.6 in 1988, dips to 1.3 in 1990 and 1992, and rises to 2.3 in 1997.

Year	United States	Michigan
1988	2.5	1.6
1989	2.6	1.8
1990	2.3	1.3
1991	2.5	1.5
1992	2.7	1.2
1993	3.3	1.2
1994	3.4	1.5
1995	3.4	1.4
1996	3.6	1.7
1997	3.8	2.3

Unintentional Suffocation Death Rates United States, 1995-1997



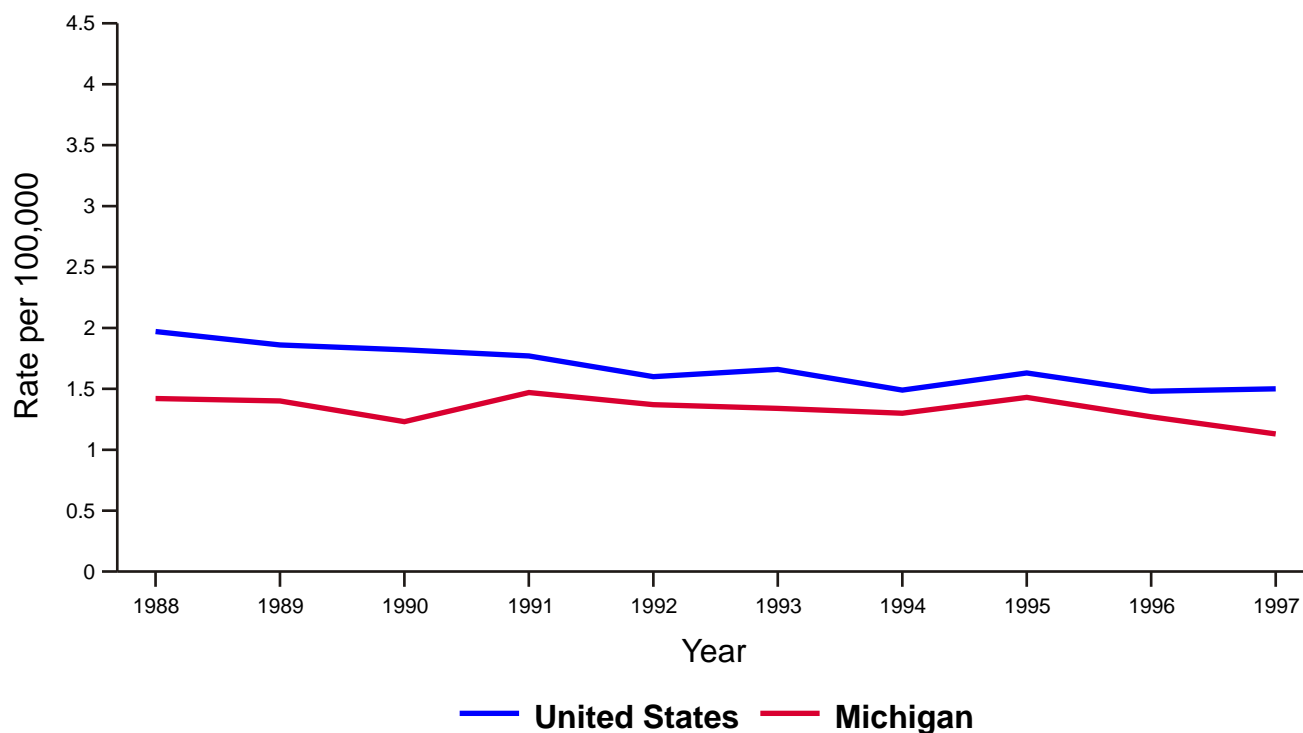
United States and Michigan 1988-1997



Unintentional Drowning Death Rates United States, 1995-1997



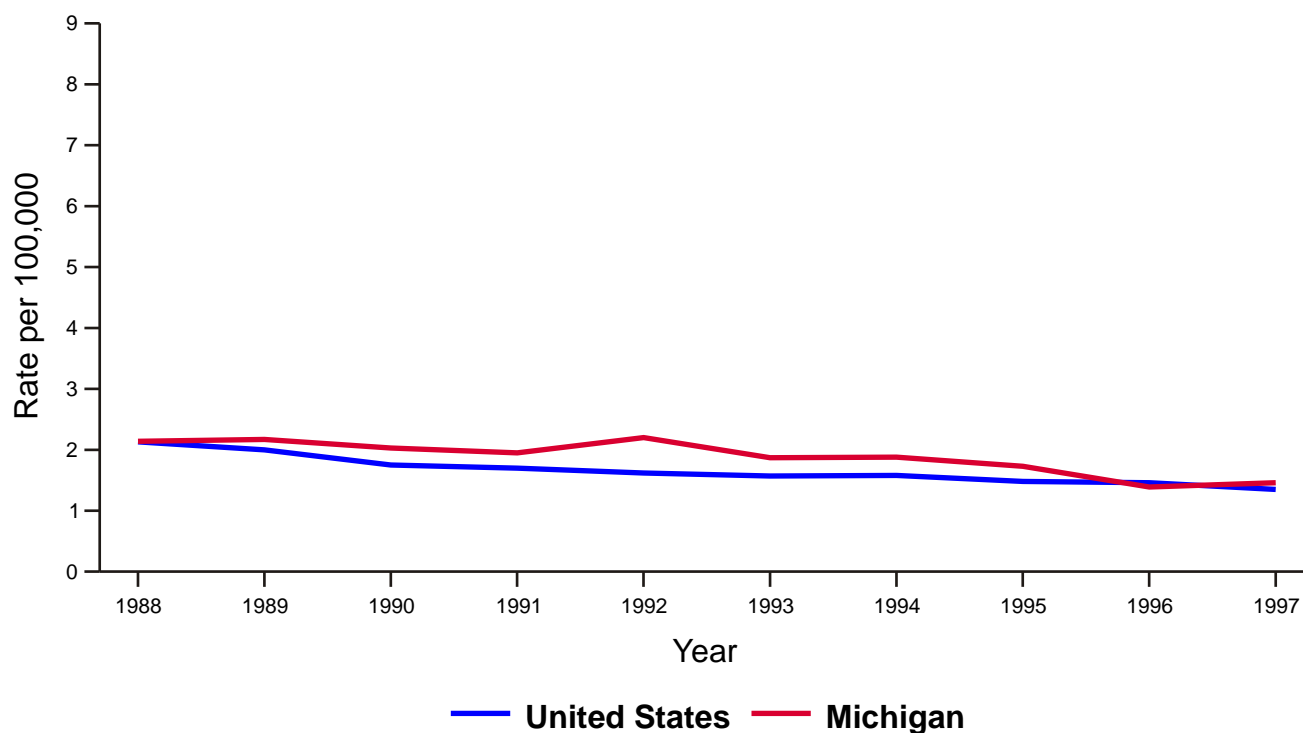
United States and Michigan 1988-1997



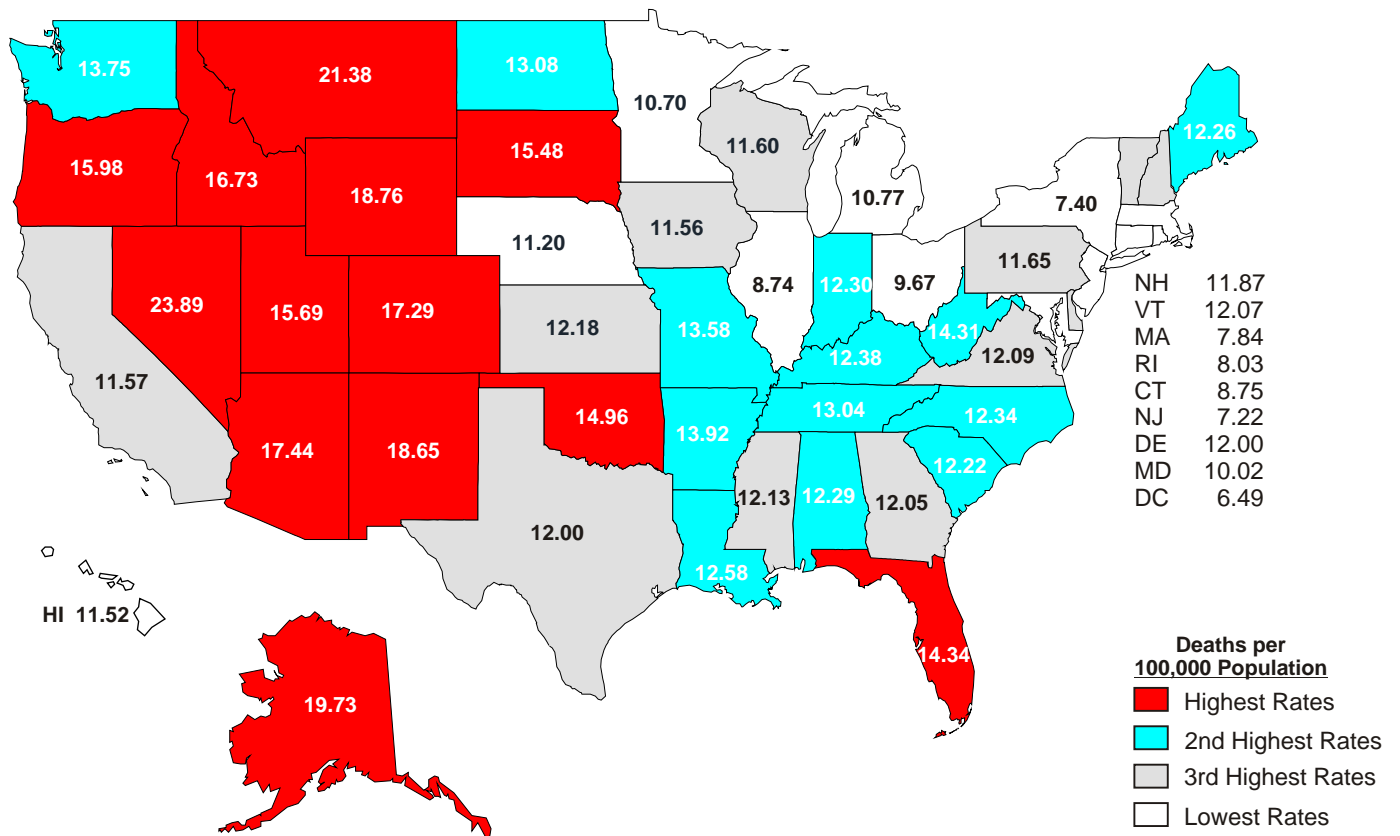
Unintentional Fire and Burn-Related Death Rates United States, 1995-1997



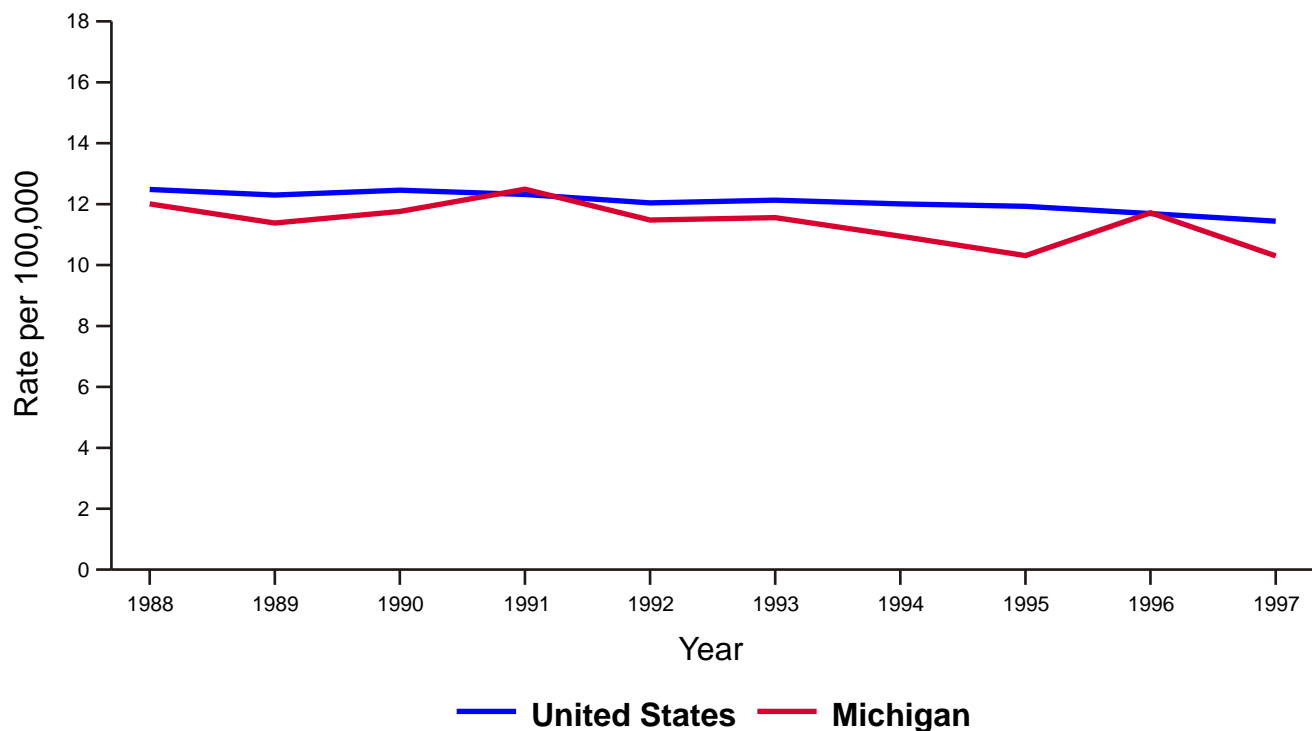
United States and Michigan 1988-1997



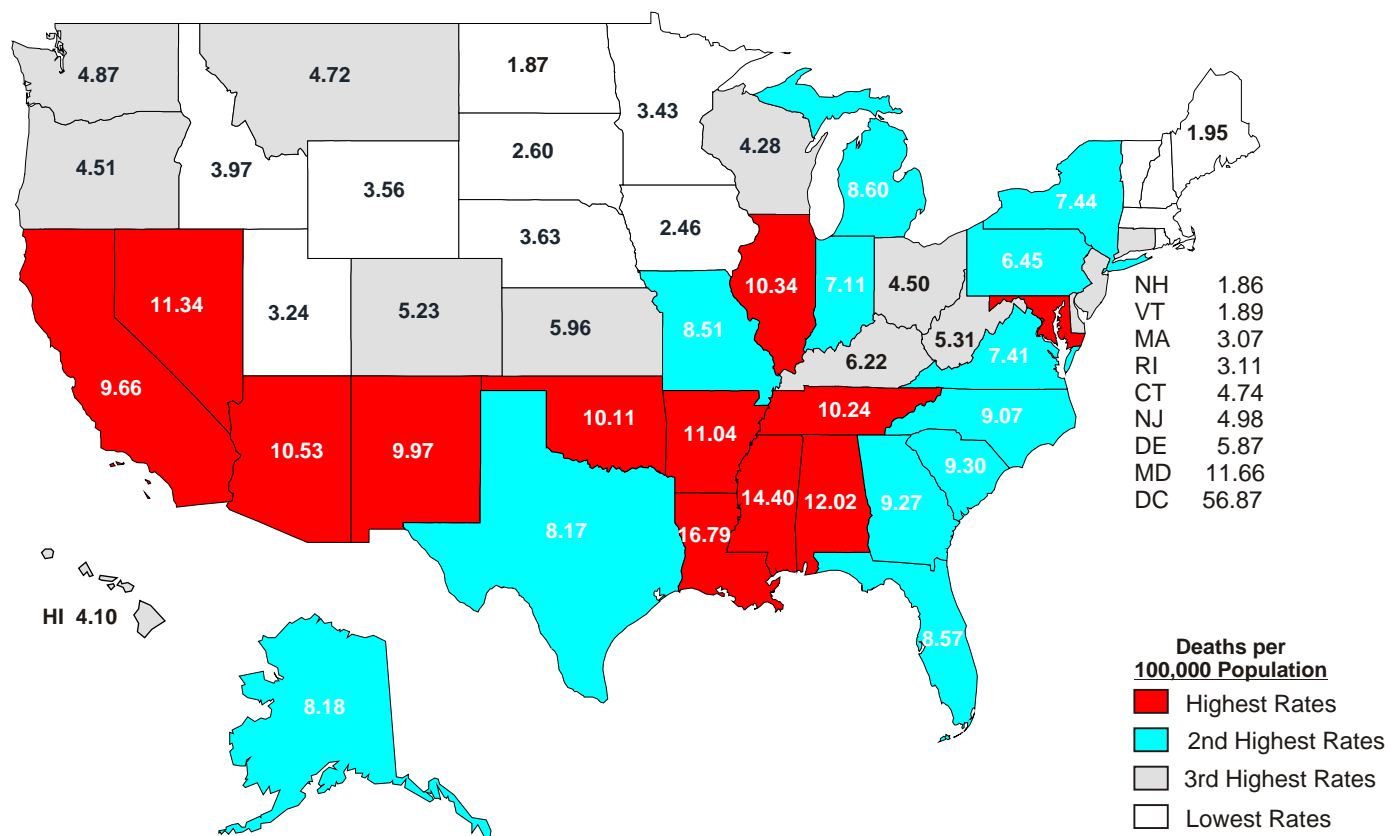
Suicide Death Rates United States, 1995-1997



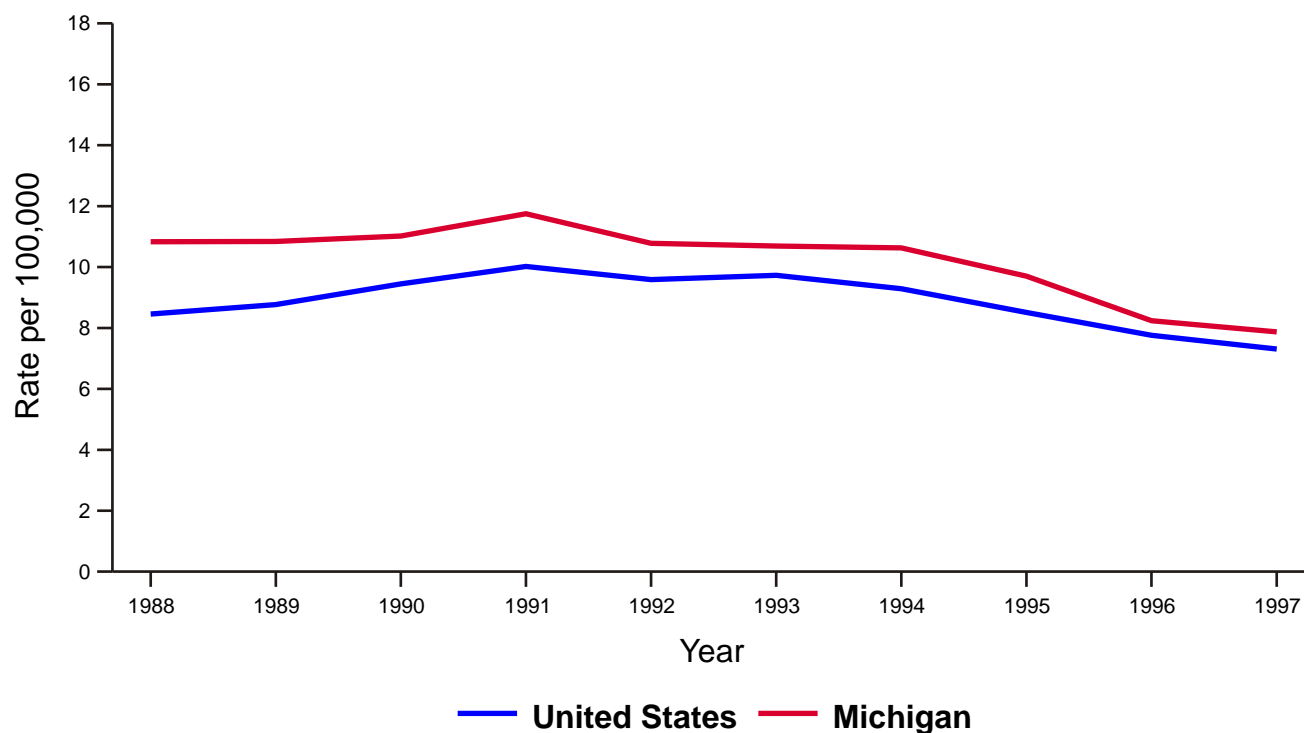
United States and Michigan 1988-1997



Homicide Death Rates United States, 1995-1997



United States and Michigan 1988-1997



Deaths per 100,000 Popu

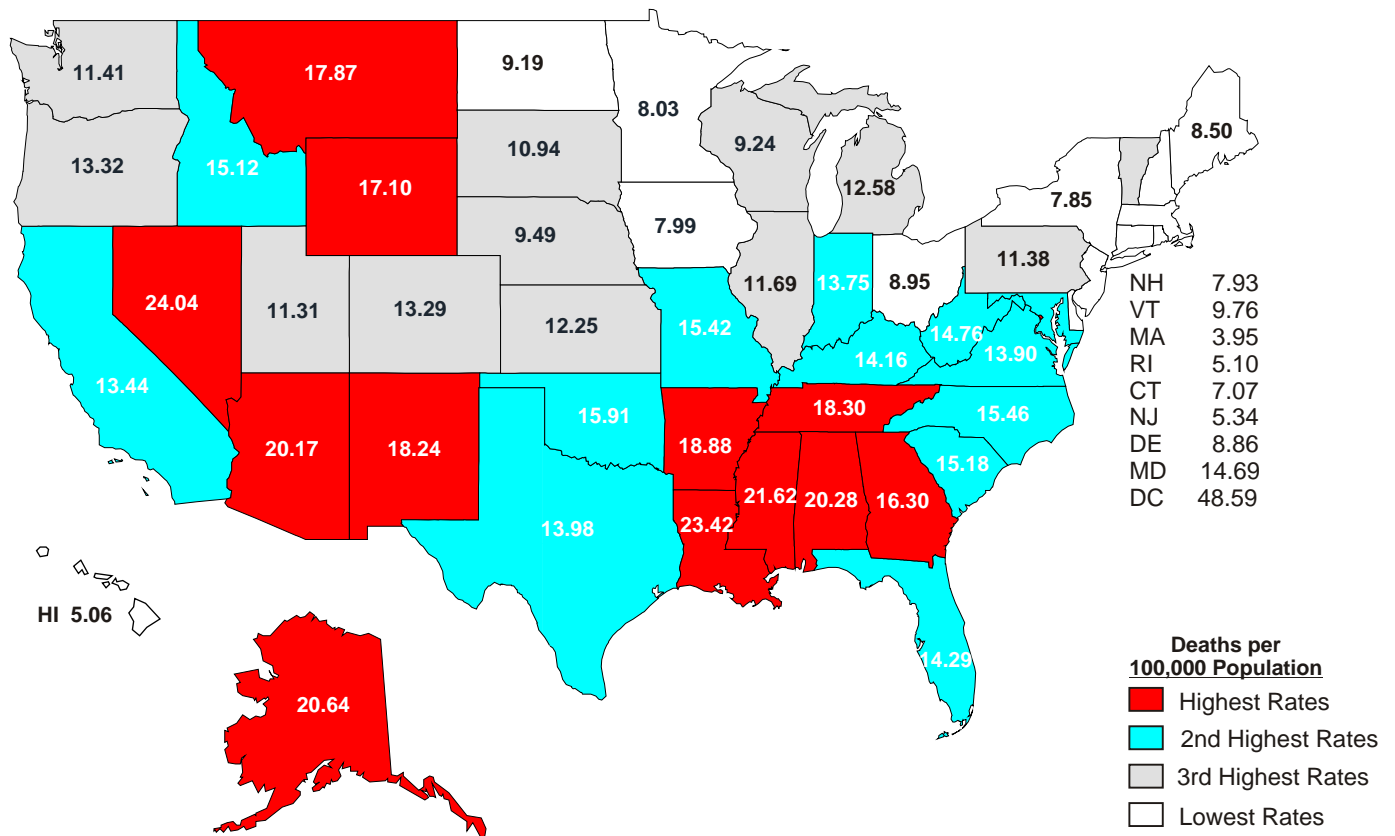
- Highest
- 2nd Hig
- 3rd High
- Lowest

NH	14.30
VT	19.29
MA	7.91
RI	11.74
CT	12.28
NJ	11.09
DE	17.16
MD	14.30
DC	28.13

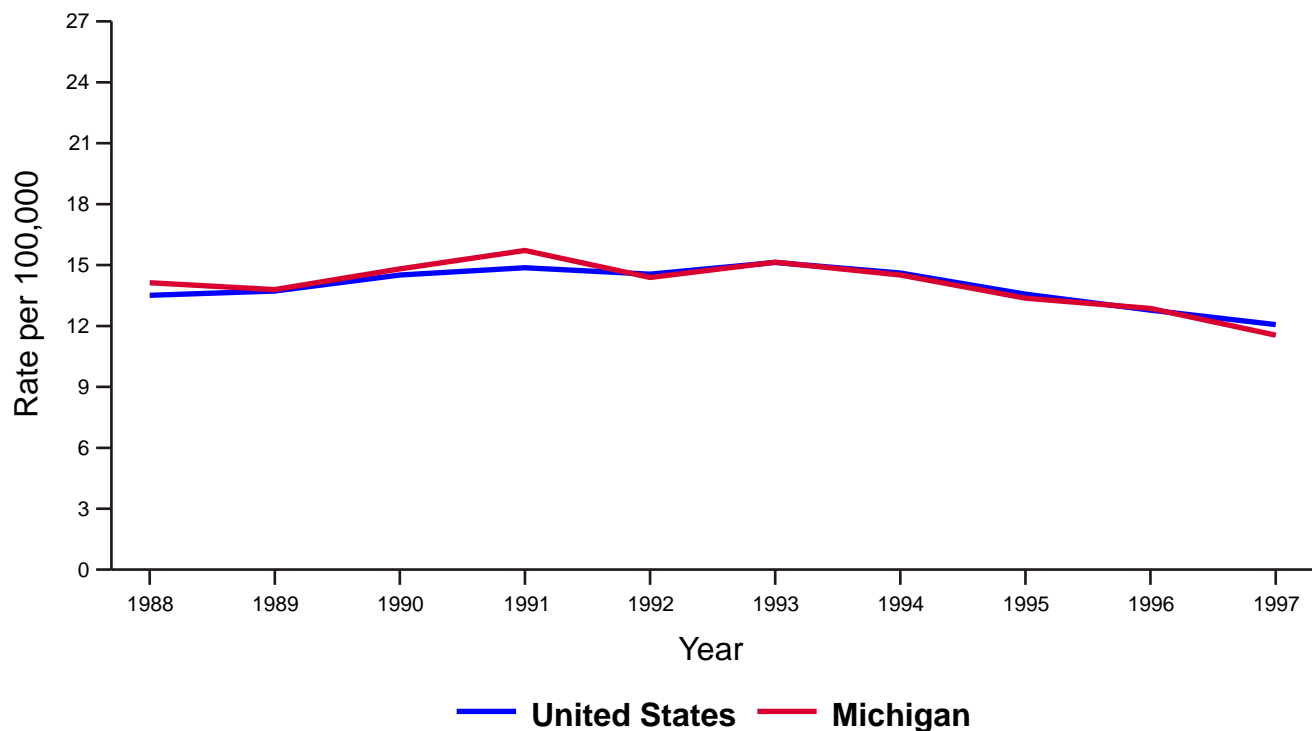
Year	United States (Rate per 100,000)	Michigan (Rate per 100,000)
1988	21.0	18.5
1989	20.5	18.8
1990	20.5	18.5
1991	20.0	18.5
1992	19.0	17.0
1993	19.5	16.8
1994	19.5	17.2
1995	19.0	17.5
1996	18.8	17.2
1997	18.5	16.0

* Includes unintentional and intentional deaths from motor vehicles, firearms, falls, and other causes (of determined and undetermined intent).

Firearm-Related Death Rates* United States, 1995-1997



United States and Michigan 1988-1997



* Includes deaths from firearm suicide, firearm homicide, unintentional firearm-related deaths, and firearm-related deaths of undetermined intent.

MICHIGAN INJURY CONTROL PROJECTS

Cooperative Agreements

The National Center for Injury Prevention and Control (NCIPC) currently funds the following work through three cooperative agreements in Michigan:

- Prevention of Fire-Related Injuries: a project to: (1) increase the prevalence of smoke alarms in communities with fire mortality and fire incidence rates above State averages and mean household incomes below the poverty line; and, (2) decrease deaths and injuries due to residential fires through the distribution and installation of smoke alarms in high-risk homes in target communities that do not have adequate smoke alarm coverage. (*Michigan Department of Community Health*)
- Violence Against Women: a project to establish the Michigan Prevention of Violence Against Women Program. Other program goals are to: evaluate the usefulness of the surveillance system for assessing VAW; establish a broadly representative advisory structure to address issues related to VAW; assess and define the state's capacity and role in addressing VAW; develop, implement, and evaluate 4 multifaceted community level programs to prevent VAW; and, prepare and broadly disseminate replication guidelines describing all aspects of the VAW program. (*Michigan Department of Public Health*)
- Coordinated Community Responses to Prevent Intimate Partner Violence: a project to reduce domestic violence. The goals are to: (1) expand and enhance the existing coalition; (2) improve the coordinated community response; (3) improve and expand primary prevention activities; (4) enhance services for victims of intimate partner violence and their families; and, (5) conduct a process and outcome evaluation of every aspect of the project. (*Women's Center, Inc., Marquette*)

Research Grants

The NCIPC supports the following three extramural research projects in Michigan:

- Preventing Alcohol Related Adolescent Injury: a project to prevent alcohol use/misuse among adolescents, thereby decreasing their risk of alcohol-related injuries by developing a computer-based intervention to prevent alcohol use/misuse among adolescents presenting to the Emergency Department (ED); and testing the efficacy of this intervention by conducting a randomized clinical trial among injured adolescents presenting to the ED. The intervention will prevent alcohol use/misuse by: increasing knowledge about the effects of alcohol; promoting more positive attitudes about not using/abusing alcohol; and promoting more positive behavioral intentions. (*Ronald F. Maio, D.O., University of Michigan Medical Center, Ann Arbor*)

- The Biomechanics of Brain Injury: The theme of this project is computer modeling of head injury. The modeling project is supported by two other experimental projects to measure strain in the brain during impact and material properties of the brain, including microscopic testing to determine the mechanical properties of axons. The computer model of the brain is almost complete. It needs some additional validation against experimental data for severe impacts with high angular accelerations. The proposed projects are designed to use the model to shed more light on brain injury mechanisms and to develop a hypothetical tolerance surface which accounts for both linear and angular acceleration inputs. The results of this research will be a fully validated computer model which can be used to predict sites of injury within the brain for an impact of known direction and magnitude. Such information will be useful not only for the prevention of brain injury but also for the treatment of brain injury during which site specific drugs can be channeled directly to these sites.
(Albert King, Ph.D., Wayne State University, Detroit)
- Blunt Knee Insults Causing a Post-Traumatic Osteoarthritis: a project addressing two biomechanical issues of trauma to the patella-femoral joint: off-axis loads and rate of loading. Approximately 70 percent of insults to this joint occur in non "pure" frontal collisions. Impact scenarios representative of automotive impact pulse times are being studied. This research project also addresses: (1) injury to the tibial-femoral joint in the knee, an injury which occurs during lower extremity entrapment, as well as in the home, sports and workplace environments; and, (2) the use of blood and urine markers to help diagnose an "injured knee" early. (Roger Haut, Ph.D., Michigan State University, East Lansing)